PROGRESS

OF

MEDICAL SCIENCE.

THERAPEUTICS.

UNDER THE CHARGE OF

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Treatment of Bubonic Plague.—MR. JAMES CANTLIE, after noting general hygienic details, advises calomel in from 5- to 10-grain doses, followed by a saline in some five hours' time. This frequently stops vomiting, which is often present, clears away the jaundiced aspect, restores the power of taking nourishment, and seems to diminish mental aberration and cardiac distress. From the very onset, or certainly after twenty-four or forty-eight hours, it will be found necessary to stimulate the patient by food, alcohol, or medicine. Unless the patient is actually delirious, there is not usually much difficulty in feeding. In fact, in comparison with allied ailments the appetite is wonderfully good. On the other hand, a full meal is not without its dangers. Food should be in small quantities, frequently repeated, and of a kind which is easily digested. Essence of beef, in fluid or jelly form, is excellent. Ox-tail soup, mutton-broth, beef- and chicken-tea should be at hand and varied to suit the patient. Conjee water—water in which rice is boiled—is useful as a drink and serves as nourishment. Milk with ice, sipped slowly, and ice-cream are particularly grateful. Thirst is a marked symptom, and ice to suck, if not kept up too long, water or lemon and water (not lemonade) to drink, iced beer and stout, brandy, or whiskey diluted with three or four times its quantity of water (not aërated waters) may all be used. When the pulse shows signs of failing or collapse or faintness supervenes, the alcohol is doubly beneficial, and brandy is preferable to whiskey. The active delirium is best controlled by cold to the head—Leiter's coils, ice-bag, or wet cloth. Of drugs, hyoscine in $\frac{1}{100}$ grain dose hypodermatically is the most efficient and safe of the hypnotics. At times nothing will avail but morphine, in $\frac{1}{8}$ to $\frac{1}{4}$ grain dose subcutaneously in combination with atropine, which is most useful when painful adenitis complicates the cerebral intoxication. Of the symptoms, diarrhœa may be treated by salol in 10-grain doses, or by a suppository of morphine, $\frac{1}{4}$ grain, and cocaine, $\frac{1}{2}$

grain. Vomiting may be controlled by a mustard-plaster to the epigastrium, ice to suck, and an effervescent draught of a few drops of hydrocyanic acid and solution of morphine. For the pyrexia chemical antipyretics should not be used. Frequent sponging with tepid water, ice to the head and nape of the neck, iced drinks, and a short application of the wet-pack, with the administration of brandy by the mouth or rectum, are useful. External stimulants, as fly-blisters and mustard to the limbs, abdomen, and over the heart, are serviceable. Smelling-salts and strong ammonia to the nostrils often arouse a patient in collapse and permanently revive those apparently moribund. Hypodermatic injections of ether must be used frequently and freely, and are likely to be attended by remedial results. Internally, ammonium carbonate in a tincture or decoction of cinchona is most useful, while digitalis and strophanthus are unsatisfactory. Camphor, either hypodermatically in sterilized oil or as a 2-grain pill, is a direct stimulant and a stomachic carminative. Musk may be used in 5-grain doses every six hours. Strychnine sulphate in $\frac{1}{18}$ grain dose hypodermatically is regarded as a more reliable agent, and the inhalation of oxygen is not to be neglected.—*British Medical Journal*, 1897, No. 1883, p. 249.

Enteric Fever Treated with Antitoxic Serum.—MR. FRANK M. POPE reports four cases, the serum (prepared by Bokenham) being injected into the loins under careful antisepsis. In two cases steady defervescence took place from the date of the first injection, although this should not have been expected for six or seven days. This defervescence took a somewhat long time, so that it is possible that the period of the disease was not much shortened, but their general condition during the third week was much less serious than we are accustomed to see. In two instances there was an urticarial rash, which started at the seat of puncture and spread to some distance on the surrounding skin.—*British Medical Journal*, 1897, No. 1883, p. 259.

Treatment of Chlorosis.—M. BARBIER states that the most efficacious preparation is iron protoxalate. Of accessory symptoms, the fever should be treated by the wet-pack, the neuralgia by anodynes, especially those which do not destroy red blood-corpuscles, and the dyspepsia, which is often set up by food which is too rich or too irritant. The majority of chlorotics suffer from hyperpepsia and hyperacidity, and the stomach should be cared for before commencing the iron.—*Revue de Thérapeutique*, 1897, No. 4, p. 116.

Digitoxin.—M. L. ADRIAN, in order to clear up the confusion at present existing, presents the following statements: (1) The digitoxin studied in 1888 by Lafont and Bardet is not identical with the more active commercial article of 1893–'94. (2) This difference leads us to believe that digitalis, besides the digitalin already isolated in purity, contains a very active glucoside of the strophanthin type. (3) This digitoxin is not in every case a pure drug, for its variations have been demonstrated, and for this reason should be omitted from the pharmacopœia for fear of accidents. (4) The digitalin of Nativelle is a pure, crystallized product of constant composition, of constant pharmacological action, and for these reasons should be the only one admitted to the pharmacopœias. Recently Kiliani has presented a glucosidal body of the chemical formula $C_{36}H_{50}O_6$, or exactly that established by Arnaud for crystallized digitalin. This substance, designated as digitoxin, is none other than the crystallized digitalin of Nativelle.—*Les Nouveaux Remèdes*, 1897, No. 3, p. 78.

Serum-therapy in Poisoning by the Venom of Snakes—DR. PAUL GIBIER states that as soon as possible after the bite we should inject 2 to 5 drachms, and even more when the wound has been inflicted upon a person of large size by a dangerous reptile, as the rattlesnake. The injection should be made with the usual antiseptic precautions in the subcutaneous tissue of the lateral part of the abdomen. While the injection is being prepared, and in case the bite has been inflicted on a limb, it is well to surround the latter tightly just above the bite, between the bitten part and the body, with a string, a handkerchief, or any other piece of linen. An excellent means of destroying the venom which has not been carried into the circulation consists of injecting into the puncture of the bite and surrounding tissues 2 drachms of a 1 to 60 solution of lime chloride. The same syringe may be used as for injecting the serum. A few minutes after injection the ligature may be removed. The patient is then rubbed vigorously and hot tea or coffee administered in order to determine an abundant perspiration. The action of fermented drinks or ammonia is dangerous. The local application of caustics is at least useless.—*Bulletin of the Pasteur Institute*, 1897, No. 1, p. 12.

The Treatment of Heart-disease, with Special Reference to Mitral Regurgitation.—DR. H. A. HARE states that the first and most important point in the vast majority of cases is rest, placing the patient flat on his back in bed, or at least in the reclining position, and, removing all unnecessary exercise, diminish the work of the heart to an extraordinary degree. When medicines are needed there is nothing better for the majority of cases than digitalis, given in doses of from 5 to 20 drops of the tincture night and morning with meals. This should be stopped every few days, or at least decreased in quantity, to allow the system to eliminate or distribute what remains of the earlier doses. If the urine decreases rather than increases in quantity, the cumulative action of digitalis must be looked for with increased diligence. If anæmia coexists, iron and arsenic, particularly the latter, which seems to improve the nutrition of the heart-muscle, are necessary. In patients well advanced in years, with beginning atheromatous change in the bloodvessels, potassium or sodium iodide often proves exceedingly valuable. Residence during the winter months in a mild climate, where the peripheral bloodvessels will not be contracted by cold and therefore will not increase the work of the heart by offering obstruction to the peripheral circulation, will be of much benefit. Venesection will frequently give relief if there be evidence of pulmonary congestion and laboring of the heart due to distention of the right ventricle. A hypodermatic injection of morphine will often act with great advantage during a paroxysm of cardiac failure. When the action of the heart is exceedingly irregular and the organ is irritable, an ice-bag applied to the præcordium is sometimes valuable, but care should be taken that it does not give the patient cold. Warm baths designed to dilate the peripheral bloodvessels and to increase the action of the skin, and the daily use of massage, are valuable adjuncts to the treatment above outlined.—*The Medical Fortnightly*, 1897, No. 6, p. 155.

Treatment of Gout.—DR. F. LEVISON, believing that the uric-acid output does not depend upon the intake of albuminoids, but rather that the disease is secondary to renal degeneration, which, in turn, is caused by the failure of the uric acid to remain in solution, and further noting that the nucleins increase the production of uric acid, would exclude from the dietary all substances rich in nuclein, as thymus gland, liver, kidney, and pancreas. According to Kossel's observation, this prohibition should exclude also the yolk of egg, the paranuclein of which comports itself as nuclein. Alcohol, especially in high percentage liquors and in concentrated solutions, not only increases uric acid, but also directly injures the kidneys, and therefore should be forbidden. Coffee seems to increase the amount of uric acid. In order to prevent the precipitation of uric acid in the kidneys, large quantities of fluid should be taken; the best is boiled water or milk, which will wash out the body and dilute the urine. Mineral acids are not allowed, but vegetable acids, especially those which are oxidized to alkaline carbonates, can be used without harm. Excessive alkalinization of the urine leads to two dangers: (1) the formation of a phosphatic calculus, or (2) in patients whose kidneys are already diseased and in whose blood there is already commenced a storing up of uric acid, there supervenes an acute attack of gout from an excessive amount of sodium salts in the blood and tissues. So long as the reaction of the morning urine is only feebly acid and the sediment obtained by centrifuge contains no uric-acid crystals, all is attained that is attainable from the use of alkalies, and further increase of the dose is not only unnecessary, but may be directly harmful. Recognizing the dangers of excessive use of the alkalies, von Norden makes use of calcium carbonate in the treatment of gravel. Calcium carbonate is not eliminated by the kidney, but in the intestines unites with phosphoric acid and is eliminated as calcium phosphate. Thus phosphoric acid being diminished in the urine, the triple phosphates are then more largely formed, while the mono-sodium phosphate is in a smaller amount, so that the urine remains acid and yet holds uric acid in solution. For acute gouty attacks the greatest reliance is placed upon colchicum. For the stiffness and deformities various methods have been in use—dietetic regulations, massage, iodine-painting, and especially various warm baths, as Aix-les-Bains, Aachen, Eilsen, Franzensbad, or Sandefjord.

Recently, Grawitz makes use of hot sand-baths; the dry sand is heated to a temperature of 104° to 122° F. and the limb wrapped in it. This has not, according to the author, benefited any instance of arthritis, although it relieves nerve-pains, as in neuritis after influenza. Of the various chemical remedies, piperazin, lysidin, lycetal, and others of the kind are without theory as to their action, and their first words of praise are followed by adverse criticism, so that their popularity is of short duration. Of much greater value is the electrical treatment, making use of a battery of forty-eight large Leclanché cells for thirty minutes. The positive pole, connected with a carbon electrode, is immersed in a 2 per cent. solution of lithium chloride which has been made alkaline with lithium carbonate. The negative carbon electrode is placed in a very weak sodium chloride solution. The portion of the body to be treated is placed in the lithium bath and a convenient part, as the hand or foot, is put into the salt solution. A current of twenty to thirty milliampères is now passed, although some patients cannot bear more than ten. Of the fifteen patients who received this treatment, ten were markedly benefited, while in the remainder the results were less favorable or negative. The results claimed are that stiff and useless joints become movable and serviceable; that the pains are completely removed, and the muscular atrophy disappears. The theory of the action is that lithium, at the positive pole, is separated from the lithium chloride solution and carried into the body in an available form, so that readily soluble lithium urate is formed from the deposited urates.—*St. Petersburger medicinische Wochenschrift*, 1897, Nos. 1, S. 1; 2, S. 9.

The Abortive Treatment of Acute Coryza.—M. COURTADE makes use of a siphon-douche to irrigate the nasal passages with saline solution at a temperature of 122° F., a pint of the liquid being usually sufficient. The jet must not be directed against the lateral wall of the fossa, for this will provoke a sensation of heat. A fall of three to four inches is sufficient for nasal purposes. In order that the irrigation may be suddenly stopped, if necessary, the tube should be furnished with a cut-off. The higher the temperature the smaller the quantity of fluid which will be necessary. Since it is the heat which is important, the choice between solutions of sodium chloride and sodium bicarbonate is indifferent. Antiseptic solutions having a bactericidal action may be used. This method should be used with care, in order that an otitis media may not be set up.—*Bulletin Général de Thérapeutique*, 1897, 3e liv. p. 90.

Treatment of Asthma.—DR. W. BRÜGELMANN, after reviewing the causes which may give rise to the symptom asthma, recommends the removal of local irritations. To lessen the sensibility of the respiratory mucous membrane, sprays of 1 per cent. tannic solution or of potassium chlorate in atomizer may be useful. In bronchial asthma inhalations of ammonium chloride solution or strong carbolic mixture from a Wulff-bottle are recommended. In asthma of cardiac origin the inhalation of compressed air, with the use of digitalis and strophanthus, is indicated. If interstitial nephritis is a causative factor, milk-diet, baths, diuresis, and diaphoresis are in order. The *éducation asthmatique* means the use of suggestion and autosuggestion, tending toward better mental processes, until the stereotyped answer of the asthmatic, "I cannot," is no longer met with. To suggestion may be placed the cures following the use of secret remedies or the directions of irregular practitioners. The diet should be the usual mixed one. In seeking for a climate it is well to remember that for a time immunity from attacks may be apparent, but finally acclimatization takes place and the symptoms reappear.—*Therapeutische Monatshefte*, 1897, Heft 2, S. 74.

Pain and its Therapeusis.—DR. S. V. CLEVENGER, after pointing out the disadvantages of various analgesic drugs, states that lactophenin is destined to supersede largely the entire array of analgesics proper, owing to its nontoxic peculiarities and the feeling of comfort described by many physicians as following its use. It affords the best results with the least ill effects. Its range of incompatibility is less than other synthetic compounds, and it may be combined with caffeine, quinine, and salicylic acid. The minimum dose of 5 to 10 grains may be increased until a daily maximum of 45 grains has been reached. It is but slightly soluble in water, although acting promptly, so that it can be given dry and be washed down with a drink of water. A dose of 15 grains usually acts as a feeble hypnotic. There are no untoward symptoms following its use, and, contrary to the experience with some synthetic drugs, the pulse becomes fuller and stronger under its use. The range of application is extensive, and the testimony of the author is in corroboration of the findings of other physicians as to its superior analgesic effects, its safety and promptness of action.—*Journal of the American Medical Association*, 1897, No. 5, p. 173.

The Treatment of Dysentery.—MR. JOHN MABERLY, from his experience in over one hundred consecutive cases, believes that in the *Monsonia ovata* he has a more powerful remedy than any which we at present possess in the treatment of the various forms of dysentery. A tincture of the plant is made by maceration in spirit (1 to 8). The dose varies from 1 to 4 drachms at four-hour intervals. The average number of days under treatment was 8.1 for chronic and 2.3 for acute cases. It was found by experiment that some specimens of the plant were more active than others, due apparently to the facts that they were too old when collected, and that other drugs were at times made use of. Apparently there were no fatal cases.—*The Lancet*, 1897, No. 3832, p. 368.

Condurango.—DR. G. BARDET believes that there is no doubt this is a drug, calming in its action, which diminishes the reflexes and antagonizes exaggerated motility. This is especially noticeable in gastric pain, and, in addition, it improves the digestion of persons suffering from lesions of the stomach. According to Tcheisow, it stimulates the pancreatic and biliary functions, and this supplements its action upon gastric digestion. It does not, however, produce a specific effect in gastric cancer, but only acts as above noted. The dose of the 20 per cent. tincture is from two to four teaspoonfuls and of the extract seven to fifteen grains. In prescribing this drug it is well to specify the bark of the white condurango, which is the only species as yet studied.—*Les Nouveaux Remèdes*, 1897, No. 3, p. 65.

Action of the Roentgen Rays upon the Normal Skin and Hair-follicles.—DR. A. FORSTER has reached the following conclusions: (1) one to two hours' use of the ordinary tube does not give rise to any dermatitis; (2) the same statement can be made as to short exposure with the best focus-tubes; (3) a single half-hour exposure gives no untoward results, but from similar repeated exposures there seems to be a cumulative action; (4) in some individuals there is an action analogous to that of sunburn, and in addition a falling out of the hair. Should it be ascertained that the hair does not grow again, we would have a very simple method of depilation.—*Deutsche medicinische Wochenschrift*, 1897, No. 7, S. 105.

Traumatol (Iodokresin).—DR. W. SCHATTENMANN describes this as a violet-red, amorphous, remarkably fine, bulky, odorless powder which results from a chemical combination of cresylic acid ($C_6H_4CH_3OH$), from coal-tar cresol, and iodine, containing about 54 per cent. of the latter. It is insoluble in water, acids, and alcohol, slightly in ether, but readily soluble in chloroform and strong alkalies. Laboratory-experiments demonstrated that it is not poisonous and that it possesses antiseptic properties. It is employed as a powder, gauze, vaseline, glycerin, crayon, plaster, and collodion. It may be prepared as a 5 to 10 per cent. traumatol-zinc-paste, 10 per cent. traumatol-lanolin-vaseline, or 10 to 50 per cent. traumatol-chloroform. For venereal ulcers, after preliminary cleansing, it brings about a speedy cure. The crayons are useful for the healing of fistulous tracts, dissolving more slowly than those made of iodoform. For genital erosions the collodion is preferred. As a powder, or with chloroform, excellent results have been obtained in syphilitic affections of the mucous membranes. For various operations performed in genito-urinary work—phimosis, buboes, gland-extirpations, papillomas, warts—the application of the powder, which is covered over with the collodion, is recommended. It addition to its antiseptic properties, its drying and unirritating effects are so marked that its field of usefulness embraces a considerable number of skin-diseases. The results obtained upon seventy-five patients who were treated by this remedy, used alone, show conclusively that we have a valuable addition to our therapeutic resources.—*Therapeutische Monatshefte*, 1897, Heft 2, S. 89.

Some Important Facts about Chloroform.—DR. H. A. HARE concludes that while this drug without doubt acts as a general depressant poison to the respiratory centre and the heart, in the same manner as it paralyzes all living protoplasm when applied in excess, when improperly given by inhalation it produces a death equivalent to that resulting from hemorrhage, which is a failure of the respiration, not so much from a direct depression of the respiratory centre as from its starvation of blood; and while the tendency of the drug is to depress and dilate the heart, just as it dilates the vessels of which the heart is merely a highly specialized part, the failure in the pulse rests upon vasomotor palsy, the patient becoming pulseless because the heart has not any blood to pump. This view is confirmed by the laboratory-tracings of many independent investigators, extending over many years and made in all parts of the world, all of which show a fall of blood-pressure. It is confirmed by Hill, who has seen the abdominal vessels engorged with blood, the medulla almost bloodless, and the heart still pumping, although respiration had ceased. Clinically, several observers have used inversion with compression of the floating ribs in artificial respiration, which has forced blood into the chest and saved life. There have been frequent reports of death from chloroform while the patient was sitting up or half-recumbent, because the blood-paths, being dilated, this posture favored anæmia of the vital centres. Again, it has been proved both experimentally and clinically that the best vasomotor stimulant—belladonna or atropine—given before the chloroform increases its safety, and that compression of the limbs by bandages does likewise. Finally, Hill has shown that abdominal compression also produces resuscitation by sending blood to the heart. On the contrary, saline transfusion is useless, because the dilated blood-paths will receive all the saline for a long time before they will overflow toward the heart, for as fast as the fluid flows in they dilate. The question of blood-pressure is most important, and therefore in using chloroform the head must be kept low, precede its administration by atropine hypodermatically, bandage the limbs if the patient is feeble or already bloodless, and, if necessary, place compresses on the abdomen and apply them deeply by pressure if a failing circulation is developed. Since an intact respiratory centre means regular breathing, we watch this function to determine the dose of chloroform actually inhaled, and because any variation in this function, as shown in irregular breathing, means that the chloroform is disordering arterial tension.—*Therapeutic Gazette*, 1897, No. 2, p. 73.

Schleich's Infiltration-anæsthesia.—DR. GERHARDI briefly sums up the advantages of this method as follows: (1) It is devoid of danger and diminishes, to a very great extent, the necessity for general narcosis. (2) Small operations, and in a sitting posture, can be done in the practitioner's office and without subsequent narcosis-katzenjammer, so that the patient can return to his home. (3) He can operate alone, because the anæsthesia and operation go on simultaneously. (4) The patients now readily allow themselves to be operated upon.—*Münchener medicinische Wochenschrift*, 1897, No. 6, S. 138.

Eucaine.—DR. GAETANO VINCI, reviewing the literature, cites Vollert, Best, and Wüstefeld only as presenting unfavorable reports. These report burning, lachrymation, blepharospasm, conjunctival and ciliary injection, mydriasis, and slight paresis of accommodation. While the author used a 2 per cent. solution, the authors quoted employ stronger ones (Vollert, 5; Best, 4; and Wüstefeld, 5 and 10 per cent.). While a 2 per cent. solution may cause slight burning, it lasts at most half a minute. As for injury to the cornea, mentioned by Vollert and Wüstefeld but denied by Berger and Deneffe, it can be said that cocaine, under similar circumstances, acts more energetically. From a considerable number of observations upon animals the author concludes that practically there is no danger in this direction. As for the other objections, they seem to be determined as non-existent by other observers. Further than this, eucaine seems to possess a slight antibacterial action, in which cocaine is entirely wanting.—*Therapeutische Monatshefte*, 1897, Heft 2, S. 99.

DR. M. POUCHET presents a preliminary note. Its toxic equivalent is almost equal to that of cocaine, but presents the inconvenience of not presenting, in certain cases, the prodromal phases of intoxication, so that poisonous symptoms, it may be fatal ones, may suddenly declare themselves. The intensity of its action upon the heart, equal if not greater to that of cocaine, leads us to believe that this should be considered as a dangerous drug, while the anæsthesia which it produces is more intense than that of cocaine under the same circumstances. After small doses subcutaneously injected into frogs there followed a considerable slowing of the heart-beats and a very manifest modification in the form of the cardiac revolution. In the same dose cocaine does not produce this result.—*Les Nouveaux Remèdes*, 1897, No. 3, p. 75.